Package Qualification Report

Reliability By Design

Qualification Description:

The information contained herein represents proof of Reliability and Performance of the Package Series listed below in accordance with the Qualification Plan and test methods referenced in Section 7.0, after exposure to a variety of environments and mechanical events that occur during installation and operational lifetime of the product. Upon conclusion of the testing the product continued to operate within specification limits, demonstrating its capability of reliable operation throughout its lifetime.

The purpose of this report is to present Qualification Test results of the referenced Package Series. The Pericom product data presented in this report qualifies the products manufactured in this package configuration, using the same bill of materials and assembled by the identified subcontractor location. The report describes the qualification test program, procedures utilized, criteria enforced (at the time of product validation), and specific result data obtained during the testing of three lots of semiconductors. The three lots consist of an equal number of units from different date codes, from the same production line and SubContractor to ensure manufacturing repeatability.

Lot Background Information:

Qual Vehicle:	PI3HDMI412ADZBE	Qual Test Date:	Dec-2011 update Sep-2016
Supplier (Code):	GTK (G)	Die Attach Material:	1076DJ-G
Pkg Type - Code:	TQFN-56 (ZB56)	Wire Size & Material:	0.8 mil PdCu
Outline Drawing:	PD-2008	Mold Compound:	G770HJ
By Extension Pkg:	ZH42 ZH32 ZH28 ZD48 ZD40 ZF36 ZL64 ZF54	Leadframe Material:	A194 Copper
		Lead Finish:	PPF (NiPdAu)
	All QBE packages pass MSL1, and packing will be as MSL1.	Date Codes:	

Pericom's Qualification Test Results:

Stress Test	Test Procedure	Test Conditions	Duration	# of Lots	Samples per Lot	Results Pass/Fail
Preconditioning	JESD22-A113	**MSL1** (*) see below	NA	3	154	462 / 0
CSAM	J-STD-020	No delamination of Die Top, Wire bond, Down bond areas	NA	3	22	66 / 0
PreCon UHAST	JESD22-A118	130°C, RH 85%, 33.3 psia, 0V	96 hrs	3	77	231 / 0
PreCon BHAST	JESD22-A110	130°C, RH 85%, 33.3 psia, 1.2V	96 hrs	3	77	231 / 0
(QBE from ZL72 - Jun-2014)		130°C, RH 85%, 33.3 psia, 1.2V	192 hrs	3	77	231 / 0
PreCon Temp Cycle	JESD22-A104	-65°C to +150°C 500 Cycles	100 cycles	3	77	231 / 0
		-65°C to +150°C 500 Cycles	500 cycles	3	77	231 / 0
HTSL (no PreCon)	JESD22-A103	1000hrs, 0V, 150°C	500 hrs	3	77	231 / 0
		1000hrs, 0V, 150°C	1000 hrs	3	77	231 / 0
Wire Strength, IMG		After 1000 hours HTSL	NA	3	2	6 / 0
Splash, Cratering		After Wire bonding	NA	3	3	9 / 0
Physical Dimension	JESD22-B100	Per Datasheeet	NA	3	5	15 / 0
External Visual Insp	JESD22-B101	NA	NA	3	5	15 / 0
Solderability	J-STD-020 JESD22-B102	Pb-Free Solder Dip 245°C	NA	3	5	15 / 0

Qualificaton by Extension Information:

Where a product of interest is not sampled during this period, it is valid to use the reliability data of the particular process technology or package type family to which the part belongs. All parts within the same family are designed to the same rules, and manufacturing is controlled by SPC. Within a product family, a device can only be fabricated on one process technology/ option, and only assembled on one package type process.

If there are any questions about this qualification, please contact Quality Support at: customerquestion@pericom.com

(*) Supplier meets requirements of MSL1. Due to one or more suppliers can meet only MSL2, the ZB56 packing shall be MSL2

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Date: **Dec-2011 update Sep-2016**

PKG Type & Code: **TQFN-56 (ZB56)** QBE: ZH42 ZH32 ZH28 ZD40 ZD48 ZF36 ZL64

Assembler-Code: **GTK (G)**

Qual Vehicle: **PI3HDMI412ADZBE**

By extension: Pericom active devices using the Package at the time of the Qualification:

PI2DBS212ZHE	PI3G612ZHE	PI3V712-BZHE	PI6C4911510ZHIE	PI3HDMI301ZLE
PI2DBS212ZHEX	PI3G612ZHEX	PI3V712-BZHEX	PI6C4911510ZHIEX	PI3HDMI301ZLEX
PI2DBS412ZHE	PI3HDMI101-BZHE	PI3VDP612-AZHE	PI6C49S1510ZDIE	PI3HDMI431ARCZLE
PI2DBS412ZHEX	PI3HDMI101-BZHEX	PI3VDP612-AZHE	PI6C49S1510ZDIEX	PI3HDMI431ARCZLEX
PI2DBS6212ZHE	PI3HDMI101ZHE	PI3VDP612-AZHE	PI6C49X0210ZHIE	PI3HDMI431ARZLE
PI2DBS6212ZHEX	PI3HDMI101ZHE	PI3VDP612-AZHE	PI6C49X0210ZHIEX	PI3HDMI431ARZLEX
PI2EQX3421ZHE	PI3HDMI101ZHEX	PI3VDP612-AZHEX	PI6LC4820ZDE	
PI2EQX3421ZHE	PI3HDMI101ZHEX	PI3VDP612-AZHEX	PI6LC4820ZDEX	PI3EQX10908AZFE
PI2EQX3421ZHEX	PI3HDMI412ADZBE	PI3VDP612-AZHEX	PI6LC4830ZHE	PI3EQX10908AZFEX
PI2EQX3421ZHEX	PI3HDMI412ADZBEX	PI3VDP612-AZHEX	PI6LC4830ZHEX	PI3EQX12908AZFE
PI2EQX4951SLAZDE	PI3HDMI412FT-AZHE	PI3VDP612ZHE	PI6LC4840ZHE	PI3EQX12908AZFEX
PI2EQX4951SLAZDEX	PI3HDMI412FT-AZHEX	PI3VDP612ZHEX	PI6LC4840ZHEX	PI3EQX8908A1ZFE
PI2EQX6812ZHE	PI3HDMI412FT-BZHE	PI3VDP8200ZBE	PI6LC4831BZBIE	PI3EQX8908A1ZFEX
PI2EQX6812ZHEX	PI3HDMI412FT-BZHEX	PI3VDP8200ZBEX	PI6LC4831BZBIEX	PI3EQX8908AZFE
PI2LVD412ZHE	PI3HDMI412FTZHE	PI6LC4831AZBIE	PI2EQX3201BLZFE	PI3EQX8908AZFEX
PI2LVD412ZHEX	PI3HDMI412FTZHEX	PI6LC4831AZBIEX	PI2EQX3201BLZFEX	
PI2PCIE212ZHE	PI3HDMI412ZHE	PI6LC4833ZBIE	PI2EQX3201BZFE	
PI2PCIE212ZHEX	PI3HDMI412ZHEX	PI6LC4833ZBIEX	PI2EQX3201BZFEX	
PI2PCIE2212ZHE	PI3L720ZHE		PI2EQX4401DZFE	
PI2PCIE2212ZHEX	PI3L720ZHEX		PI2EQX4401DZFEX	
PI2PCIE2214ZHE	PI3LVD412ZHE	PI2EQX3232AZDE	PI2EQXDP101-AZFE	
PI2PCIE2214ZHE	PI3LVD412ZHE	PI2EQX3232AZDEX	PI2EQXDP101-AZFEX	
PI2PCIE2214ZHEX	PI3LVD412ZHEX	PI2EQX3232BZDE	PI2EQXDP101ZFE	
PI2PCIE2214ZHEX	PI3LVD412ZHEX	PI2EQX3232BZDEX	PI2EQXDP101ZFEX	
PI2PCIE2412ZHE	PI3LVD512ZHE	PI2EQX4404ZDE	PI4ULS3V08ZFE	
PI2PCIE2412ZHEX	PI3LVD512ZHEX	PI2EQX4404ZDEX	PI4ULS3V08ZFEX	
PI2PCIE2422ZHE	PI3PCIE2215ZHE	PI2EQX4432DZDE	PI6LC4872-01ZDE	
PI2PCIE2422ZHEX	PI3PCIE2215ZHE	PI2EQX4432DZDEX	PI6LC4872-01ZDEX	
PI2PCIE2442ZHE	PI3PCIE2215ZHEX	PI2EQX4832ZDE	PI6LC4872-01ZDIE	
PI2PCIE2442ZHEX	PI3PCIE2215ZHEX	PI2EQX4832ZDEX	PI6LC4872-01ZDIEX	
PI2PCIE2452ZHE	PI3PCIE2415-AZHE	PI3HDMI415-AZDE	PI6LC4872-02ZDE	
PI2PCIE2452ZHEX	PI3PCIE2415-AZHEX	PI3HDMI415-AZDEX	PI6LC4872-02ZDEX	
PI2PCIE412-CZHE	PI3PCIE2415ZHE	PI3HDMI415ZDE	PI6LC4872-02ZDIE	
PI2PCIE412-CZHEX	PI3PCIE2415ZHEX	PI3HDMI415ZDEX	PI6LC4872-02ZDIEX	
PI2PCIE412-DZHE	PI3PCIE3412ZHE	PI3VDP101LSZDE	PI3WVR12612ZHE	
PI2PCIE412-DZHEX	PI3PCIE3412ZHEX	PI3VDP101LSZDEX	PI3PD22924CZEE	
PI2USB3212ZHE	PI3PCIE3415ZHE	PI3VDP411LSZDE	PI3PD22924CZEEX	
PI2USB3212ZHEX	PI3PCIE3415ZHEX	PI3VDP411LSZDEX		
PI3EQX4951BZDE	PI3PCIE3422ZHE	PI3VDP611LSZDE		
PI3EQX4951BZDEX	PI3PCIE3422ZHEX	PI3VDP611LSZDEX		
PI3EQX4951STAZDE	PI3PCIE3442ZHE	PI3VDP8122ZDE		
PI3EQX4951STAZDEX	PI3PCIE3442ZHEX	PI3VDP8122ZDEX		
PI3EQX6741STBZDE	PI3PCIE3452ZHE			
PI3EQX6741STBZDEX	PI3PCIE3452ZHEX			
PI3EQX7742STZHE	PI3PCIE3462ZHE			
PI3EQX7742STZHEX	PI3PCIE3462ZHEX			